

Directive

9180.61

06-15-00

OFFICIAL CALIBRATIONS FOR THE DICKEY-JOHN GAC 2100 MOISTURE METER

1. PURPOSE

This directive transmits the official calibrations for use with the Dickey-john Corporation, Grain Analysis Computer (GAC 2100), the moisture meter used by GIPSA for official grain moisture measurement.

2. BACKGROUND

This directive transmits new official moisture calibrations for **flaxseed, lentils, Smooth Dry peas, safflower seed, Short Grain Rough rice, and confectionary sunflower seed**. It also restates all other calibrations transmitted in the previous directive dated May 7, 2000.

Attachment 1 lists the calibrations for NTEP grains (those grains for which moisture meters are standardized under the National Type Evaluation Program) transmitted in the previous directive (May 7, 2000). Attachment 2 lists calibrations for other grains and commodities, of which six are new and the remainder were conveyed in the previous directive.

The calibrations transmitted in Attachment 1 of this directive are identical to the 2000 NTEP calibrations for these grains.

3. REPLACEMENT HIGHLIGHTS

This directive replaces Directive 9180.61, Official Calibrations for the Dickey-john GAC 2100 Moisture Meter, dated May 7, 2000.

4. PROCEDURES

Use the new calibrations for **flaxseed, lentil, Smooth Dry pea, safflower seed, and Short Grain Rough rice** inspections performed on and after June 15, 2000, and for **confectionary sunflower seed** inspections performed on and after August 1, 2000. Before official testing on the effective dates, enter the new constants as explained in the Operator's Manual (Chapter 6, page 26). The Motomco 919 shall not be used for official moisture determination on any grain after the effective date of the respective GAC 2100 calibration.

The names, valid moisture ranges, and constants for official calibrations are given in Attachments 1 and 2. The effective dates of those calibrations are listed in Attachment 3. Note that the calibrations for **corn, corn (high-moisture), and sunflower seed (oil-type)** which were published in the previous directive become effective on August 1, 2000. Average differences between the GAC 2100 and the USDA air oven method are given in Attachments 4 and 5 for typical market moisture ranges.

Questions concerning these instructions should be directed to Patricia Jackson (816) 891-0445, or James Rampton (816) 891-0450.

/s/ David Orr

David Orr, Director
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Attachments

OFFICIAL GAC 2100 CALIBRATION CONSTANTS
for all Grains in the NTEP Testing Program

Six-rowed Barley <u>(6 - 20%)</u>	Two-rowed Barley <u>(8 - 20%)</u>	Corn <u>(8 - 20%)</u>	Corn (High-Moisture) <u>(19 - 40%)</u>	Oats <u>(8 - 18%)</u>	Long Grain Rough Rice <u>(8 - 26%)</u>
BARLEY SIX ROWED 990318N	BARLEY TWO ROWED 990317N	CORN 000307N	CORN HI MOIST 000307N	OATS 000330N	RICE LG ROUGH 990316N
K1: 0774	K1: 0321	K1: 1783	K1: 0154	K1: 5245	K1: 0099
K2: 1219	K2: 1983	K2: 7205	K2: 0180	K2: 7438	K2: 3242
K3: 1153	K3: 1229	K3: 1488	K3: 1027	K3: 1328	K3: 1239
K4: 0100	K4: 2153	K4: 8155	K4: 1059	K4: 8997	K4: 2528
K5: 2255	K5: 2255	K5: 2305	K5: 2305	K5: 1705	K5: 1900
K6: 1084	K6: 1083	K6: 2553	K6: 2553	K6: 1067	K6: 2050
K7: 2006	K7: 2008	K7: 2008	K7: 4019	K7: 1808	K7: 2608
K8: 0322	K8: 0347	K8: 0009	K8: 0051	K8: 0640	K8: 0286
K9: 1046	K9: 1056	K9: 1087	K9: 1087	K9: 1038	K9: 1057
Medium Grain Rough Rice <u>(8 - 28%)</u>	Sorghum <u>(8 - 28%)</u>	Soybeans <u>(6 - 24%)</u>	Sunflower Seed (Oil-Type) <u>(4 - 22%)</u>	Durum Wheat <u>(6 - 20%)</u>	Hard Red Spring Wheat <u>(6 - 22%)</u>
RICE MG ROUGH 990311N	SORGHUM 990311N	SOYBEANS 990217N	SUNFLOWER OIL 000308N	DURUM 990315N	WHEAT HRS 990315N
K1: 1356	K1: 0387	K1: 1083	K1: 1144	K1: 0562	K1: 0215
K2: 3636	K2: 5026	K2: 1535	K2: 1368	K2: 3135	K2: 3294
K3: 1255	K3: 1431	K3: 1092	K3: 1048	K3: 1302	K3: 1291
K4: 4179	K4: 4337	K4: 0762	K4: 0573	K4: 2248	K4: 2590
K5: 1900	K5: 2405	K5: 2455	K5: 1305	K5: 2505	K5: 2505
K6: 2053	K6: 1067	K6: 2075	K6: 1575	K6: 1078	K6: 1075
K7: 2808	K7: 2808	K7: 2406	K7: 2204	K7: 2006	K7: 2206
K8: 0230	K8: 1057	K8: 0139	K8: 1774	K8: 0028	K8: 0888
K9: 1057	K9: 1045	K9: 1087	K9: 1048	K9: 1055	K9: 1045
Hard Red Winter Wheat <u>(8 - 22%)</u>	Hard White Wheat <u>(6 - 16%)</u>	Soft Red Winter Wheat <u>(8 - 22%)</u>	Soft White Wheat <u>(6 - 24%)</u>		
WHEAT HRW 990311N	WHEAT HARD WHITE 990315N	WHEAT SRW 990315N	WHEAT SOFT WHITE 000306N		
K1: 0587	K1: 0610	K1: 0681	K1: 0601		
K2: 1708	K2: 1037	K2: 1158	K2: 1317		
K3: 1233	K3: 1124	K3: 1150	K3: 1169		
K4: 0760	K4: 1001	K4: 0101	K4: 0318		
K5: 2500	K5: 2500	K5: 2505	K5: 2505		
K6: 1074	K6: 1072	K6: 1071	K6: 1072		
K7: 2208	K7: 1606	K7: 2208	K7: 2406		
K8: 0527	K8: 0557	K8: 0436	K8: 1109		
K9: 1045	K9: 1045	K9: 1045	K9: 1045		

OFFICIAL GAC 2100 CALIBRATION CONSTANTS
 for Non-NTEP Grains and Commodities

	Great Northern			Corn	
	Beans <u>(8 - 20%)</u>	Pea Beans <u>(8 - 20%)</u>	Pinto Beans <u>(8 - 18%)</u>	Canola <u>(4 - 15%)</u>	Corn <u>(High-Oil)</u> <u>(6 - 30%)</u>
Black Beans <u>(8 - 20%)</u>	BEANS BLACK 990415	BEANS GREATNORTH 990426	BEANS PEA (NAVY) 990406	BEANS PINTO 990326	CANOLA 990426
K1: 1673	K1: 1557	K1: 1139	K1: 3390	K1: 0013	K1: 0437
K2: 5429	K2: 3103	K2: 3109	K2: 5752	K2: 1425	K2: 1699
K3: 1352	K3: 1139	K3: 1190	K3: 1317	K3: 1084	K3: 1211
K4: 6177	K4: 2632	K4: 2457	K4: 6836	K4: 0582	K4: 0815
K5: 2605	K5: 2425	K5: 2675	K5: 2445	K5: 2201	K5: 2305
K6: 1097	K6: 1880	K6: 1086	K6: 2073	K6: 1369	K6: 2560
K7: 2008	K7: 2008	K7: 2008	K7: 1808	K7: 1504	K7: 3006
K8: 2304	K8: 2434	K8: 2150	K8: 2073	K8: 2242	K8: 1988
K9: 1077	K9: 1098	K9: 1077	K9: 1098	K9: 1024	K9: 1087
Flaxseed <u>(5 - 15%)</u>	Lentils <u>(7 - 15%)</u>	Smooth Dry Peas <u>(8 - 19%)</u>	Rapeseed <u>(4 - 15%)</u>	Short Grain Rough Rice <u>(10 - 18%)</u>	Rye <u>(8 - 20%)</u>
FLAX 000411	LENTILS 000417	PEAS SMOOTH DRY 000425	RAPESEED 990426	RICE SG ROUGH 000413	RYE 990426
K1: 0114	K1: 0661	K1: 1422	K1: 0013	K1: 1352	K1: 0402
K2: 1394	K2: 1093	K2: 5251	K2: 1425	K2: 3636	K2: 1305
K3: 1090	K3: 1122	K3: 1354	K3: 1084	K3: 1255	K3: 1138
K4: 0501	K4: 0002	K4: 4884	K4: 0582	K4: 4179	K4: 0390
K5: 2255	K5: 2505	K5: 2635	K5: 2201	K5: 1900	K5: 2265
K6: 1557	K6: 2075	K6: 0894	K6: 1369	K6: 2053	K6: 1081
K7: 1505	K7: 1507	K7: 1908	K7: 1504	K7: 1810	K7: 2008
K8: 1202	K8: 1096	K8: 1603	K8: 1450	K8: 0252	K8: 1305
K9: 1034	K9: 1087	K9: 1098	K9: 1024	K9: 1047	K9: 1055
Safflower Seed <u>(4 - 14%)</u>	Sunflower Seed (Confectionary) <u>(5 - 17%)</u>				
SAFFLOWER 000405	SUNFLOWER CONFEC 000413				
K1: 1690	K1: 1744				
K2: 3005	K2: 1791				
K3: 1093	K3: 1057				
K4: 2518	K4: 2355				
K5: 1605	K5: 1015				
K6: 1549	K6: 1562				
K7: 1404	K7: 1705				
K8: 1880	K8: 1701				
K9: 1057	K9: 1089				

Effective Dates of Calibrations Listed in Attachments 1 and 2

<u>Grain/Commodity</u>	<u>Calibration</u>	<u>Calibration Effective Date</u>
A. NTEP		
Barley, Six-Rowed	990318N	May 01, 1999
Barley, Two-Rowed	990317N	May 01, 1999
Corn	000307N	Aug 01, 2000
Corn (High-Moisture)	000307N	Aug 01, 2000
Oats	000330N	May 07, 2000
Rice, Long Grain Rough	990316N	May 01, 1999
Rice, Medium Grain Rough	990311N	May 01, 1999
Sorghum	990311N	May 01, 1999
Soybeans	990217N	Feb 22, 1999
Sunflower Seed (Oil-Type)	000308N	Aug 01, 2000
Wheat, Durum	990315N	May 01, 1999
Wheat, Hard Red Spring	990315N	May 01, 1999
Wheat, Hard Red Winter	990311N	May 01, 1999
Wheat, Hard White	990315N	May 01, 1999
Wheat, Soft Red Winter	990315N	May 01, 1999
Wheat, Soft White	000306N	May 07, 2000
B. Non-NTEP		
Beans, Black	990415	Jun 15, 1999
Beans, Great Northern	990426	Jun 15, 1999
Beans, Pea (Navy)	990406	Jun 15, 1999
Beans, Pinto	990326	Jun 15, 1999
Canola	990426	Jun 15, 1999
Corn (High-Oil)	990422	Jun 15, 1999
Flaxseed	000411	Jun 15, 2000*
Lentils	000417	Jun 15, 2000*
Peas, Smooth Dry	000425	Jun 15, 2000*
Rapeseed	990426	Jun 15, 1999
Rice, Short Grain Rough	000413	Jun 15, 2000*
Rye	990426	Jun 15, 1999
Safflower Seed	000405	Jun 15, 2000*
Sunflower Seed (Confectionary)	000413	Aug 1, 2000*

* Date of Transition from Model 919 to GAC 2100

OFFICIAL CALIBRATION ACCURACY *
 Average Differences (GAC 2100 minus Air Oven), as Percent Moisture

Moisture Interval	Six-rowed Barley (%)	Two-rowed Barley (%)	Corn (%)	Oats (%)	Long Grain Rough Rice (%)	Medium Grain Rough Rice (%)
8-10	0.09	0.14	--	--	-0.06	0.15
10-12	0.04	0.18	0.21	0.08	0.17	0.05
12-14	0.07	-0.02	0.09	-0.12	-0.01	0.05
14-16	0.06	0.02	0.06	-0.27	0.15	0.13
16-18	--	--	0.09	--	0.08	0.10
18-20	--	--	0.08	--	0.15	0.18

Moisture Interval	Sorghum (%)	Soybeans (%)	Sunflower Seed (Oil-Type) (%)	Durum Wheat (%)	Hard Red Spring Wheat (%)	Hard Red Winter Wheat (%)
6-8	--	--	-0.15	--	--	--
8-10	--	0.10	0.03	-0.01	-0.06	0.05
10-12	0.24	0.05	0.25	0.14	0.04	0.02
12-14	0.15	0.04	0.17	-0.01	-0.02	-0.03
14-16	0.05	-0.08	0.07	-0.24	-0.04	-0.12
16-18	-0.16	-0.25	--	-0.20	-0.04	0.05

Moisture Interval	Hard White Wheat (%)	Soft Red Winter Wheat (%)	Soft White Wheat (%)	Moisture Interval	Corn (High-Moisture) (%)
6-8	--	--	--	20-22	0.03
8-10	0.03	--	0.20	22-24	0.21
10-12	-0.09	0.12	0.06	24-26	0.22
12-14	-0.20	0.09	-0.05	26-28	0.21
14-16	--	-0.03	-0.12	28-30	-0.32
16-18	--	-0.06	0.32		

* 2000 Official / NTEP GAC 2100 Calibrations, Typical Market Moisture Ranges
 Basis: U.S. Nationwide Sample Set, 3 Years' Data

OFFICIAL CALIBRATION ACCURACY*
 Average Differences (GAC 2100 minus Air Oven), as Percent Moisture

Moisture <u>Interval</u>	Black <u>Beans</u> (%)	Great Northern <u>Beans</u> (%)	Pea (Navy) <u>Beans</u> (%)	Pinto <u>Beans</u> (%)	Corn <u>(High-Oil)</u> (%)	Short Grain <u>Rough Rice</u> (%)
8-10	--	--	--	0.00	-0.01	--
10-12	-0.17	-0.09	-0.08	0.09	0.00	-0.01
12-14	0.07	0.18	-0.01	0.08	-0.12	-0.05
14-16	-0.03	--	0.09	0.00	-0.03	--
16-18	-0.03	--	-0.09	-0.22	0.20	--
18-20	--	--	-0.11	--	0.20	--

Moisture <u>Interval</u>	Canola (%)	Flaxseed (%)	Lentils (%)	Dry Peas (%)	Smooth Rapeseed (%)	Rye (%)
4-6	0.06	0.05	--	--	-0.05	--
6-8	-0.08	-0.02	--	--	-0.17	--
8-10	0.07	0.04	-0.03	0.03	--	--
10-12	--	--	-0.03	-0.24	--	-0.04
12-14	--	--	--	0.10	--	-0.07
14-16	--	--	--	-0.18	--	--

Moisture <u>Interval</u>	Safflower <u>Seed</u> (%)	Sunflower Seed <u>(Confectionary)</u> (%)
4-6	0.03	0.29
6-8	0.03	-0.03
8-10	0.00	-0.11
10-12	-0.37	0.06
12-14	--	0.04

* 2000 Official GAC 2100 Calibrations, Typical Market Moisture Ranges
 Basis: U.S. Nationwide Sample Set